EPA Region 7 TMDL Review

TMDL ID	195	*Water Body ID*	Lake
Water Body Name	Lake Keomah		
Pollutant	Siltation		
Tributary			
State	IA	*HUC*	070801051204
Basin	Skunk River Basin		
Submittal Date	8/19/2002		
Approved	Yes		

Submittal Letter

State submittal letter indicates final TMDL(s) for specific pollutant(s)/ water(s) were adopted by the state, and submitted to EPA for approval under section 303(d) of the Clean Water Act.

Submittal letter dated August 13, 2002.

Water Quality Standards Attainment

The water body's loading capacity for the applicable pollutant is identified and the rationale for the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources is described. TMDL and associated allocations are set at levels adequate to result in attainment of applicable water quality standards.

Excessive sediment is identified as the cause of impairment to Lake Keomah's aquatic life uses. Iowa does not have a numeric water quality criterion for siltation. The state's narrative standard states, the physical and chemical characteristics of the water body should not be altered by excessive sediment to cause reductions in aquatic habitat, spawning, reproduction and development, or sport fishing. The load capacity established for Lake Keomah is 3,361 tons/year of sediment. Achievement of this loading rate is expected to result in WQS attainment. This was determined by USDA SCS erosion rates, NRCS sediment delivery procedure, and gully erosion. This is a phased TMDL. Lake Keomah watershed project activities have been ongoing since 1993 to reduce sediment delivery. Work in the watershed has been completed since the assessment for the 303(d) list was conducted.

Numeric Target(s)

Submittal describes applicable water quality standards, including beneficial uses, applicable numeric and/or narrative criteria. If the TMDL is based on a target other than a numeric water quality criterion, then a numeric expression, site specific if possible, was developed from a narrative criterion and a description of the process used to derive the target is included in the submittal.

Water quality standards and beneficial uses are described as well as applicable narrative criteria. A phase 1 numeric expression for sediment delivery to the lake is provided, is site specific to the watershed, and is described using USDA/NRCS methodologies for estimating erosion and sediment delivery. A Phase 2 surrogate measure is also identified as a fully supporting Class B aquatic life use which will be determined in accordance with the Statewide Biological Sampling Plan protocol.

Link Between Numeric Target(s) and Pollutant(s) of concern

An explanation and analytical basis for expressing the TMDL through surrogate measures (e.g., parameters such as percent fines and turbidity for sediment impairments, or chlorophyll-a and phosphorus loadings for excess algae) is provided, if applicable. For each identified pollutant, the submittal describes analytical basis for conclusions, allocations and margin of safety that do not exceed the load capacity.

The rationale behind the desired endpoint and corresponding load allocations is a qualitative assessment that decreases in TSS loads and deposition will result in a long-term improvement in the aquatic community.

Source Analysis

Important assumptions made in developing the TMDL, such as assumed distribution of land use in the watershed, population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources, are described. Point, non point and background sources of pollutants of concern are described, including magnitude and location of the sources. Submittal demonstrates all significant sources have been considered.

The source of sediment in Lake Keomah is of non-point source origin. The watershed is 78% cropland and pasture. The majority of the land has good management practices in place. Pre-project gross erosion was estimated at 28,744 tons/year. Post-project gross erosion was estimated at 9,997 tons/year, a 65% reduction.

Allocation

Submittal identifies appropriate wasteload allocations for point, and load allocations for nonpoint sources. If no point sources are present the wasteload allocation is zero. If no nonpoint sources are present, the load allocation is zero.

The current sediment load to the lake is considered to be the load capacity which is 3,361 tons/year.

WLA Comment

The WLA is zero.

LA Comment

The load allocation established under this TMDL is 3,361 tons/year of sediment delivered to the lake from the entire watershed.

Margin of Safety

Submittal describes explicit and/or implicit margin of safety for each pollutant. If the MOS is implicit, the conservative assumptions in the analysis for the MOS are described. If the MOS is explicit, the loadings set aside for the MOS are identified and a rationale for selecting the value for the MOS is provided.

The margin of safety is implicit based on conservative assumptions used in load calculations and the Phase 2 target where the aquatic life use must be restored to the lake.

Seasonal Variation and Critical Conditions

Submittal describes the method for accounting for seasonal variation and critical conditions in the TMDL(s).

Sediment loading and transport varies substantially from year to year. It is necessary to determine impairment based on multiple years of data. The allocations were made as an average annual load.

Public Participation

Submital describes public notice and public comment opportunity, and explains how the public comments were considered in the final TMDL(s).

Public meetings regarding the proposed Lake Keomah TMDL were held in Des Moines and Oskaloosa on January 14 and January 22, 2002, respectively. A followup meeting was held June 11, 2002 in Oskaloosa to present the draft document. This TMDL is posted on IDNR's website at "http://www.state.ia.us/dnr/organiza/epd/wtresrce/files/tmdl_dev.htm".

Monitoring Plan for TMDL(s) Under Phased Approach

The TMDL identifies the monitoring plan that describes the additional data to be collected to determine if the load reductions required by the TMDL lead to attainment of WQS, and a schedule for considering revisions to the TMDL(s) (where phased approach is used).

In-lake water monitoring will also be completed as part of the Iowa Lakes Survey, which includes three times per year for each of the field seasons 2000-2004. The DNR Fisheries Bureau will conduct an assessment of the lake in accordance with the Statewide Biological Sampling Plan protocol.

Reasonable assurance

Reasonable assurance only applies when reduction in nonpoint source loading is required to meet the prescribed waste load allocations.

Reasonable assurances are not required in the TMDL because there are no point sources contributing to the impairment in the watershed.